Overview

The course addresses our shifting relations to nature, based on a range of examples including biodiversity and wildlife, microbes, soil, ecology and climate. What does it mean to conserve nature? How have ideas of nature and environment evolved over time? Why is it more difficult, but no less critical, to conserve soil than air, water or wildlife? How could microbes help humans go to Mars?... These are a few of the questions addressed in this course. The course accounts for the shifting cultural understandings of nature, and how they translate into policies, frameworks and instruments of nature conservation and environmental management. Specific attention will be given to the role of ecological sciences and knowledge in shaping nature understandings and nature conservation policies and frameworks.

Format
2-hour sessions include lecture, readings and collective discussion on the basis of readings. Readings will be given to students during the course sessions.

Students are strongly invited to participate to and engage in collective discussion.

**Grading**

At each session (with the exception of the first session), students devote 20 minutes maximum to writing down the answers to a number of key questions pertaining to the topic addressed in the previous session (without the help of books, personal notes, or internet) by mobilizing their knowledge about the topic. The professor then answers the questions while interacting with the students. She also collects some papers for evaluation (with a mark given back to the students at the next session).

At the end of the course, each student must have three marks (evaluating her/his written answers) at least, these written exercises counting for 50% of the global mark, while 50% are based on the final test (90 minutes). Presence is compulsory at every session. Oral participation is included in the overall evaluation of each student.

**General bibliography:**


**Outline**

**Session 1- Conserving what? From Wilderness to Biodiversity**

Introduces the development of protected areas in the United States and later in Europe, and how they conceived of nature conservation in terms of wilderness; accounts for the key changes in nature conservation associated with the notion of biodiversity at the turn of the 1990s (i.e. from protecting iconic species in dedicated areas, to managing ordinary biodiversity in a range of places inhabited by humans) and the main European laws and instruments devoted to biodiversity (such as Natura 2000 network).


**Session 2: Shifting ideas of nature: The case of Wolves’ return in France**
Addresses the changing relations to wildlife, focusing on wolves, at the end of the 20th century and describes the issues at stake with wolves’ return to the Alps, with a focus on the role of scientific traceability of wolf population (‘wired wildlife’).


Session 3 – Scientific Knowledge and Biodiversity Conservation: Taxonomy and Ecology

Addresses the role of scientific knowledge in nature conservation; expands on the differences between taxonomy and ecology, drawing on the example of an All Taxa Biodiversity Inventory in a national park in the French and Italian Alps.

Reading: Rebecca Ellis, Claire Waterton and Brian Wynne, Taxonomy, biodiversity and their publics in twenty-first-century DNA barcoding, Public Understanding of Science 2009.

Session 4- From Biodiversity to Ecosystem Services

Addresses how the notion of ‘ecosystem services’ has been changing nature conservation ideas and frameworks since the mid 2000s; accounts for the implementation of the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) and how it reframes nature conservation in relation with the benefits peoples get from nature.


Session 5- Ecology and the space race

Unpacks the unexpected relations between ecology and space research since the 1970s (development of ‘cabin ecology’, and comparison of the Earth with a spaceship in the development of sustainability approaches); develops the example of a European research program aiming to prepare for Mars travels drawing on microbe ecology; emphasizes the interdependence of human life and biodiversity.


Session 6- Conserving Soil: Contemporary Challenges

Accounts for the difficulty of implementing public policies dedicated to conserving soil (compared to air and water); identifies two logics i.e. Soil Biodiversity conservation versus Soil Services maintenance; retraces the rise and failure of the project of European Directive on Soil Conservation.


Session 7: New cultural understandings of microbes

Presents the shifting understandings of microbes, from a Pasteurian paradigm of microbes as vectors of diseases, to ‘post-pasteurian’ approaches to ‘good’ microbes for health, food and agriculture.

**Session 8- Soil carbon sequestration: new hopes and promises for climate change mitigation (I)**

Introduces the history of climate change policies and negotiations and the role of IPCC (Intergovernmental Panel on Climate Change); unpacks the increasing focus of climate change policies and negotiations on carbon sinks, including forests and soils.


**Session 9- Soil carbon sequestration: new hopes and promises for climate change mitigation (II)**

Presents the objectives of soil carbon sequestration, i.e. practices aiming to manage and enhance carbon stocks in agricultural soils; presents the example of the 4 per 1000 Initiative; unpacks the visions of soil at stake in enhancing the carbon stocks of soils.